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Amendment and Response

Applicant: Jenoe Tibanyi

Serial No.: 10/806,958

Filing Date: March 23, 2004

Docket: I434.105.101/IFT/76US

Title: LATERAL FIELD-EFFECT-CONTROLLABLE SEMICONDUCTOR COMPONENT FOR RF APPLICATIONS

IN THE CLAIMS

Please add claims 21-24.

Please amend claims 1 and 13 as follows:

1. (Currently Amended) A semiconductor component comprising:
a semiconductor body with a first semiconductor layer of a first conduction type and a second semiconductor layer of a second conduction type, which is applied on the first semiconductor layer and forms a front side of the semiconductor body;
in the second semiconductor layer, a first terminal zone of the second conduction type, a drift zone of the second conduction type, a channel zone of the first conduction type, which is formed between the first terminal zone and the drift zone, and a second terminal zone of the second conduction type, which is arranged at a distance from the channel zone in a lateral direction of the semiconductor body;
a gate electrode arranged in a manner insulated from the semiconductor body and adjacent to the channel zone; and
a plurality of auxiliary electrodes arranged at a distance from one another, and each formed in pillar-type fashion such that each has relatively similar dimensions in the lateral direction; auxiliary electrode has a length and has a cross-section, wherein the dimensions of the auxiliary electrode in the cross section extend in a lateral plane that is perpendicular to the length;
wherein at least one of the plurality of auxiliary electrodes, which, proceeding from the front side, extends through the second semiconductor layer right into the first semiconductor layer and which is insulated from the semiconductor body; and
wherein at least one of the plurality of auxiliary electrodes has no dimension in the lateral plane that extends substantially beyond any other dimension in the lateral plane.
2. (Cancelled)

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3. (Cancelled)
4. (Previously Presented) The semiconductor component of claim 2, wherein the plurality of auxiliary electrodes are completely surrounded by an insulation layer in the semiconductor body.
5. (Previously Presented) The semiconductor component of claim 2, wherein the plurality of auxiliary electrodes are connected to a defined potential.
6. (Previously Presented) The semiconductor component of claim 5, wherein the plurality of auxiliary electrodes and the first terminal zone are connected to the same potential.
7. (Previously Presented) The semiconductor component of claim 1, wherein the gate electrode is arranged above the front side of the semiconductor body.
8. (Previously Presented) The semiconductor component of claim 1, wherein the gate electrode is arranged in the semiconductor body.
9. (Original) The semiconductor component of claim 1, wherein the first semiconductor layer has a more heavily doped semiconductor layer of the first conduction type at a side remote from the second semiconductor layer.
10. (Previously Presented) The semiconductor component of claim 1, wherein at least one semiconductor zone of the first conduction type is arranged in the drift zone adjacent to the at least one auxiliary electrode.
11. (Original) The semiconductor component of claim 10, wherein the at least one semiconductor zone is arranged in the region of the front side of the semiconductor body.

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12. (Previously Presented) The semiconductor component of claim 1, wherein the at least one auxiliary electrode is arranged nearer to the channel zone than to the second terminal zone.

13. (Currently Amended) A semiconductor component comprising:
a semiconductor body having a first layer of a first conduction type and a second layer of a second conduction type, the second layer applied onto the first layer thereby forming a front side of the semiconductor body;

a first terminal zone of the second conduction type in the second layer;

a drift zone of the second conduction type in the second layer;

a channel zone of the first conduction type formed between the first terminal zone and the drift zone;

a second terminal zone of the second conduction type, wherein the second terminal zone and the channel zone are separated by a distance in a lateral direction on the front side of the semiconductor body;

a gate electrode insulated from the semiconductor body and adjacent the channel zone;

and

a plurality of auxiliary electrodes arranged at a distance from one another and each auxiliary electrode formed in pillar-type fashion having such that each have a length and each have relatively similar dimensions in the lateral directions, wherein all of the dimensions in the lateral directions are substantially smaller than the length;

wherein at least one auxiliary electrode ~~extending~~ extends along its length from the front side through the second layer into the first layer and insulated from the semiconductor body.

14. (Cancelled)

15. (Cancelled)

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16. (Previously Presented) The semiconductor component of claim 14, wherein the plurality of auxiliary electrodes are completely surrounded by an insulation layer in the semiconductor body.
17. (Previously Presented) The semiconductor component of claim 14, wherein the plurality of auxiliary electrodes are connected to a defined potential.
18. (Previously Presented) The semiconductor component of claim 17, wherein the plurality of auxiliary electrodes and the first terminal zone are connected to the same potential.
19. (Previously Presented) The semiconductor component of claim 13, wherein the gate electrode is arranged in the semiconductor body.
20. (Original) The semiconductor component of claim 13, wherein the first semiconductor layer has a more heavily doped semiconductor layer of the first conduction type at a side remote from the second semiconductor layer.
21. (New) A semiconductor component comprising:
a semiconductor body having a first layer of a first conduction type and a second layer of a second conduction type, the second layer applied onto the first layer thereby forming a front side of the semiconductor body;
a first terminal zone of the second conduction type in the second layer;
a drift zone of the second conduction type in the second layer;
a channel zone of the first conduction type formed between the first terminal zone and the drift zone;
a second terminal zone of the second conduction type, wherein the second terminal zone and the channel zone are separated by a distance in a lateral direction on the front side of the semiconductor body;

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a gate electrode insulated from the semiconductor body and adjacent the channel zone;
and

a plurality of auxiliary electrodes arranged at a distance from one another and each configured in a substantially cylindrical shape;

wherein at least one auxiliary electrode extends from the front side through the second layer into the first layer and insulated from the semiconductor body.

22. (New) The semiconductor component of claim 21, wherein each of the plurality of auxiliary electrodes have a substantially circular cross-section.

23. (New) The semiconductor component of claim 1, wherein each of the plurality of auxiliary electrodes are configured in a cylindrical shape.

24. (New) The semiconductor component of claim 13, wherein each of the plurality of auxiliary electrodes are configured in a cylindrical shape.